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Impact of Percutaneous Coronary Intervention on 12-month Chronic Total Occlusion Outcomes in Patients with Non-lad Disease

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Background: Chronic total occlusion (CTO) intervention is still challenging because of the limited procedural success rate and high target failure. The impact of percutaneous coronary intervention (PCI) for CTO in patients (pts) with non-LAD disease is not clear. We evaluated the 12-month clinical outcomes between PCI and optimal medical therapy (OMT) for CTO lesions in pts with non-LAD disease.
Methods: A total of 406 consecutive CTO pts were divided into 2 groups according to treatment strategy; PCI group (n=154) and OMT group (n=252). Major clinical outcomes were compared between the two groups up to 12 months.
Results: At baseline, patients in the OMT group had a lower left ventricular ejection fraction and a higher prevalence of male gender, elderly, stroke, de novo disease, left main disease, multivessel disease, and well-developed collateral vessels (≥grade 2), whereas the PCI group had a higher prevalence of prior MI, prior PTCA, prior CABG and single-vessel CTO disease. Clinical outcomes at 12 months showed lower mortality, lower incidence of overall MI and Q wave MI in the PCI group (Table). After baseline adjustment by multivariate analysis, there was no difference between the 2 groups.
Conclusion: In our study, PCI seems to have no definite benefit over OMT in reducing 12-month hard endpoints in patients with non-LAD CTO. Long-term follow up with larger study population will be necessary for further clarification.

Table. 12-month clinical outcomes

Variable, N (%)	PCI (n=153)	OMT (n=217)	p-Value	P Value (Adjusted)	OR (95%CI)
Mortality	4 (2.6)	17 (7.8)	**0.033**	0.228	0.44 (0.11-1.66)
Cardiac death	2 (1.3)	10 (4.6)	0.078	NS	-
Non cardiac death	2 (1.3)	7 (3.2)	0.238	NS	-
Myocardial infarction; MI	0 (0)	11 (5)	**0.005**	0.995	-
Q wave MI	0 (0)	6 (2.7)	**0.038**	NS	-
Non W wave MI	0 (0)	5 (2.3)	0.059	NS	-
Revascularization	17 (11.1)	19 (8.7)	0.452	0.620	1.22 (0.54-2.73)
TLR	14 (9.1)	4 (1.8)	**0.001**	**0.010**	5.88 (1.52-22.7)
TVR	17 (11.1)	15 (6.9)	0.157	NS	-
Non TVR	2 (1.3)	5 (2.3)	0.488	NS	-
All MACE	21 (13.7)	35 (16.1)	0.525	0.797	1.20 (0.63- 2.29)
TLR MACE	16 (10.4)	15 (6.9)	0.225	NS	-
TVR MACE	21 (13.7)	33 (15.2)	0.691	NS	-

Adjusted by gender, age, myocardial infarction, hypertension, diabetes, chronic kidney disease, current smoker, multivessel disease, collateral vessels(≥grade 2), and failed CTO procedure.

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Impact of Percutaneous Coronary Intervention for Chronic Total Occlusion in Patients who Received Non-chronic Total Occlusion Lesion Intervention

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Background: Chronic total occlusion (CTO) intervention is still challenging because of the limited procedural success rate and high target failure. The impact of percutaneous coronary intervention (PCI) for CTO in patients (pts) who have received PCI for non-CTO lesions is not clear. We evaluated the 12-month clinical outcomes between intervention and optimal medical therapy (OMT) for CTO lesions in these pts.
Methods: A total of 273 consecutive CTO pts who have received non-target lesion PCI were divided into 2 groups according to treatment strategy; PCI group (n=114) and the OMT (n=159). Major clinical outcomes were compared between the two groups up to 12 months.
Results: A total of 273 consecutive CTO pts who have received non-target lesion PCI were divided into 2 groups according to treatment strategy; PCI group (n=114) and the OMT (n=159). Major clinical outcomes were compared between the two groups up to 12 months.
Conclusion: In our study, intervention shows a possibility of being a favorable choice of therapy for CTO lesions in terms of lower non-Q wave MI occurrence and all MACE at 12 months in patients who underwent non-target lesion PCI. Long-term follow up with larger study population will be necessary for further clarification.

Table. 12-month clinical outcomes

Variable, n (%)	PCI (n=112)	OMT (n=144)	P Value (Unadjusted)	P Value (Adjusted)	OR (95%CI)
Mortality	4 (3.5)	12 (8.3)	0.118	0.237	0.41 (0.09- 1.78)
Cardiac death	3 (2.6)	8 (5.5)	0.260	NS	-
Non cardiac death	1 (0.8)	3 (2)	0.446	NS	-
Myocardial infarction; MI	3 (2.6)	11 (7.6)	0.083	0.061	0.22 (0.04- 1.07)
Q wave MI	3 (2.6)	6 (4.1)	0.521	NS	-
Non W wave MI	0 (0)	5 (3.4)	**0.046**	0.995	-
Revascularization	15 (13.3)	20 (13.8)	0.909	0.085	0.45 (0.18- 1.11)
TLR	12 (10.7)	3 (2)	**0.004**	0.119	3.70 (0.71- 19.3)
TVR	15 (13.3)	15 (10.4)	0.463	NS	-
Non TVR	1 (0.8)	5 (3.4)	0.176	NS	-
All MACE	19 (16.9)	30 (20.8)	0.435	**0.045**	0.42 (0.18- 0.97)
TLR MACE	15 (13.3)	12 (8.3)	0.191	NS	-
TVR MACE	19 (16.9)	27 (18.7)	0.712	NS	-

Adjusted by gender, age, myocardial infarction, hypertension, diabetes, chronic kidney disease, current smoker, multivessel disease, collateral vessels(≥grade 2), and failed CTO procedure.

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Impact of Percutaneous Coronary Intervention on 12-month Chronic Total Occlusion Outcomes in Patients with Limited Coronary Collateral Flow

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Background: Limited coronary collateral flow is known to have an adverse effect on clinical outcomes of coronary artery diseases. The impact of percutaneous coronary intervention (PCI) for chronic total occlusion (CTO) in pts with limited collaterals is not clear. We compared the 12-month clinical outcomes of pts treated by PCI with optimal medical therapy (OMT) for CTO lesions in pts with limited collaterals.
Methods: A total of 166 consecutive CTO pts with coronary collateral flow grade <2 were divided into 2 groups; one group underwent PCI (PCI group; n=100) and the other group was treated with OMT (OMT group; n=66). Major clinical outcomes were compared between the two groups up to 12 months.
Results: At baseline, the OMT group had a lower LVEF% and a higher prevalence of elderly, left main disease, multivessel disease, multivessel CTO, and LCX-CTO, whereas the PCI group had a higher prevalence of prior MI and prior PTCA. Clinical outcomes at 12 months showed higher incidence of non Q-wave MI in the OMT group (Table). After baseline adjustment by multivariate analysis, however, there was no difference between the 2 groups.
Conclusion: In our study, mechanical revascularization by PCI for CTO lesions in pts with limited collaterals seems to have no definite benefit in reducing 12-month morbidity or mortality. Long-term follow up with larger study population will be necessary for further determination of the benefit and risks of interventional therapy in CTO pts.

Table. 12-month clinical outcomes

Variables, n (%)	PCI group (n=99)	OMT group (n=52)	P Value (Unadjusted)	P Value (Adjusted)	OR (95%CI)
Mortality	5 (5)	7 (13.4)	0.069	0.465	0.47 (0.06-3.47)
Cardiac death	4 (4)	5 (9.6)	0.169	NS	-
Non cardiac death	1 (1)	2 (3.8)	0.235	NS	-
Myocardial infarction; MI	5 (5)	6 (11.5)	0.145	0.359	0.35 (0.04-3.20)
Q wave MI	0 (0)	3 (5.7)	0.851	NS	-
Non Q wave MI	0 (0)	3 (5.7)	0.016	NS	-
Revascularization	13 (13.1)	9 (17.3)	0.489	0.807	0.81 (0.15-4.16)
TLR	12 (12.1)	3 (5.7)	0.215	NS	-
TVR	13 (13.1)	7 (13.4)	0.955	NS	-
Non TVR	1 (1)	2 (3.8)	0.235	NS	-
All MACE	16 (16.1)	8 (15.3)	0.901	0.791	0.83 (0.22-3.07)
TLR MACE	18 (18.1)	14 (26.9)	0.212	NS	-
TVR MACE	18 (18.1)	15 (28.8)	0.132	NS	-

Adjusted by gender, age, myocardial infarction, hypertension, diabetes, chronic kidney disease, current smoker, multivessel disease, collateral vessels(≥grade 2), and failed CTO procedure

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